

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Bushey <i>et al.</i>
Serial No.:	10/779945
Confirmation No.:	9366
Date Filed:	February 17, 2004
Group Art Unit:	2626
Examiner:	Borsetti, Greg
Title:	<i>System and Method for Managing Recognition Errors in a Multiple Dialog State Environment</i>

MAIL STOP – APPEAL BRIEF - PATENTS

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AMENDED APPEAL BRIEF

At the request of the Examiner, Appellants hereby submit this Amended Appeal Brief pursuant to 37 CFR § 41.37(d).

Appellant has modified the summary of claimed subject matter to refer to the page and line number of the specification. Appellant believes that this modification obviates the Examiner's objections to Section V (Summary of Claimed Subject Matter) as indicated in the notification of non-compliant appeal brief. Appellant thanks the Examiner for identifying this item and giving Appellant the opportunity to correct it. No other substantive amendments have been made to the Appeal Brief.

I. REAL PARTY IN INTEREST

The real party in interest is:

AT&T Knowledge Ventures, L.P.
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by virtue of an assignment from the inventors to SBC Knowledge Ventures, L.P., duly recorded on February 17, 2004, at Reel 014992, Frame 0919, in the Assignment Branch of the U.S. Patent and Trademark Office; a corrective assignment from the inventors to SBC Knowledge Ventures, L.P., duly recorded on August 31, 2004, at Reel 015743, Frame 0453, in the Assignment Branch of the U.S. Patent and Trademark Office; and a change of name from SBC Knowledge Ventures, L.P. to AT&T Knowledge Ventures, L.P., duly recorded on July 10, 2006, at Reel 018079, Frame 0189, in the Assignment Branch of the U.S. Patent and Trademark Office.

II. RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision regarding this appeal.

III. STATUS OF CLAIMS

<u>Status</u>	<u>Claims</u>
Pending	1-20
Canceled	None
Rejected	1-20

Appellant presents Claims 1-20 for appeal.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In the following summary, references to drawings are indicated by figure (FIG.) and reference numeral #XX and references to the specification are indicated by page and line numbers.

Independent claim 1 recites a system, see, e.g., FIG. 1, #10, for managing recognition errors in a multiple dialog state environment. The system includes an error management module, see, e.g., FIG. 1, #12, having a global error counter, see, e.g., FIG. 1, #24, a global error set point, see, e.g., FIG. 1, #26, a first dialog state error counter, see, e.g., FIG. 1, #28, a first dialog state error set point, see, e.g., FIG. 1, #30, a second dialog state error counter, see, e.g., FIG. 1, #30, a second dialog state error set point, see, e.g., FIG. 1, #34, a third dialog state error counter, see, e.g., FIG. 1, #36, and a third dialog state error set point, see, e.g., FIG. 1, #38. See, e.g., page 5, line 6 through page 6, line 21. The system further includes a first dialog state module, see, e.g., FIG. 1, #14, operable to interact with a user to perform at least one interaction task, a second dialog state module, see, e.g., FIG. 1, #16, operable to interact with a user to perform at least one interaction task, and a third dialog state module, see, e.g., FIG. 1, #18, operable to interact with a user to perform at least one interaction task. See, e.g., page 5, line 27 through page 6, line 28. Each dialog state module is further operable to determine whether the interaction task has been successfully completed or whether a recognition error has occurred, see, e.g., FIG. 3 and page 10, line 21 through page 12, line 27, update the global error counter and the respective dialog counter if an error is detected, see, e.g., page 8, line 19 through page 9, line 12, direct the user to an agent if the global error counter equals the global error set point, see, e.g., page 11, lines 16 through 27, direct the user to a different dialog state if the respective dialog state error counter equals the respective dialog state error set point, see, e.g., page 8, line 19 through page 9, line 12, re-prompt the user to complete the interaction task if the respective dialog state error counter is less than the respective dialog state error set point, see, e.g., page 11, line 28 through page 12, line 19, and selectively direct the user to a subsequent interaction task

after successful completion of the interaction task, see, e.g., page 13, line 27 through page 14, line 12.

Independent claim 4 recites a system for managing recognition errors in a multiple dialog state environment. The system includes an error management module, see, e.g., FIG. 1 #12, having a global error counter, see, e.g., FIG. 1 #24, and a global error set point, see, e.g., FIG. 1 #26 and a user interaction module, see, e.g., FIG. 1 #54, in communication with the error management module, see, e.g., FIG. 1 #12 and operable to interact with users to perform at least one interaction task, see, e.g., page 6, lines 22 through 28, the user interaction module operable to interact with the user via at least two dialog states, see, e.g., page 6, lines 22 through 28. The user interaction module is operable to determine whether an interaction task has been successfully completed or if a recognition error has occurred, see, e.g., page 8, line 19 through page 9, line 12, and page 12, lines 20 through 26. The user interaction module is further operable to communicate the occurrence of a recognition error to the error management module, and determine whether to direct a user to an agent based upon the global error counter and the global error set point, see, e.g., page 9, line 20 through page 10, line 20.

Independent claim 14 recites an error management module, see, e.g., FIG. 2 #52, for use with a communication system operable to support a multiple dialog state environment. The module includes a global error, see, e.g., FIG. 2 #60, counter operable to record the total number of recognition errors experienced by the communication system during an interaction with a particular user, and a global error set point, see, e.g., FIG. 2 #62. The module further includes a first dialog state error counter, see, e.g., FIG. 2 #64 operable to record the number of errors experienced by the communication system while using a first dialog state during an interaction with the particular user, and a first dialog state error set point, see, e.g., FIG. 2 #66. The module further includes a second dialog state error counter, see, e.g., FIG. 2 #68, operable to record the number of errors experienced by the communication system while using a second dialog state during an interaction with the particular user, and a second dialog state error set point, see, e.g.,

FIG. 2 #70. The error management module, see, e.g., FIG. 2 #52, is further operable to provide the global error counter, see, e.g., FIG. 2 #60, the global error set point, see, e.g., FIG. 2 #62, the first dialog state error counter, see, e.g., FIG. 2 #64, and the first state error set point, see, e.g., FIG. 2 #66 to the communication system for managing dialog state recognition errors. See, e.g., page 9, line 13 through page 10, line 20.

Independent claim 18 recites a method for managing recognition errors in a multiple dialog state environment. The method includes setting a global error set point, see, e.g., FIG. 1 #26 to a predefined value, see, e.g., page 5, line 27 through page 6, line 21, and monitoring recognition errors within a multiple dialog state environment, see, e.g., page 5, line 27 through page 6, line 21. The method further includes incrementally increasing a global error counter after a recognition error is detected, see, e.g., page 8, line 19 through page 9, line 12, and directing a user to an agent if the global error counter is equal to the global error set point, see, e.g., page 5, line 27 through page 6, line 21.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- Whether Claims 4 and 5 are anticipated under 35 U.S.C. §102(e) by U.S. Patent No. 6,751,591 issued to Gorin *et al.* (hereinafter, “Gorin”).
- Whether Claims 1-3 and 6-20 are unpatentable under 35 U.S.C. §103(a) over Gorin in view of U.S. Patent No. 6,138,008 issued to Dunn *et al.* (hereinafter, “Dunn”).

VII. ARGUMENT

The claims argued separately below do not stand or fall together.

A. Rejection of Claims 4 and 5 under 35 U.S.C. §102(e) as anticipated by Gorin

Claim 4

The anticipation rejection of claim 4 is improper because the reference does not teach expressly or inherently all of the claim elements. For example, claim 4 recites a global error counter. The Examiner attempts to support the rejection based upon column 4, lines 3-28 and column 7, lines 59-67 of Gorin.¹ Appellants respectfully disagree with the Examiner's construction and application of the subject matter disclosed in the cited portion of Gorin.

The column 4 passage of Gorin describes a process of creating a dialog history database for storing errors collected from interaction with human users. The column 7 passage of Gorin cited by the Examiner then describes a process of determining a probability of whether a user's input communication may be correctly understood.

The cited passages of Gorin do not expressly or inherently teach a global error counter as claimed. Neither the word "counter" nor any analogous word are found in the passages relied upon by the Examiner. The word "counter" does not appear in Gorin because Gorin's description of a process for estimating a recognition probability based, in part, on a dialog history does not expressly or inherently describe a global error counter as claimed.

Because the reference does not expressly or inherently teach all of the elements of claim 4, Appellants respectfully request the Board to reverse the anticipation rejection of claim 4 and its dependent claim 5.

Claim 5

The rejection of claim 5 is further improper, because Gorin does not expressly or inherently describe a process routing a user to an agent if a global error counter is equal to the global error set point. As discussed above with respect to claim 4, Gorin does not expressly or inherently disclose a global error counter as claimed. As such, Gorin cannot and does not expressly or inherently describe the use of a global error counter to make a call routing decision based on the counter.

¹ Office Action, page 4.

B. Rejection of Claims 1-3 and 6-20 under 35 U.S.C. §103(a) as unpatentable over Gorin in view of Dunn

Claim 1

The Section 103(a) rejection of claim 1 is improper because the references, either alone or in combination, do not teach all of the claim elements.

In *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (2007) [hereinafter *KSR*], The United States Supreme Court affirmed the long standing concept that a Section 103(a) rejection based on a rationale of combining multiple prior art references asserts that all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination yielded nothing more than predictable results to one of ordinary skill in the art.² Under *KSR*, therefore, an examiner must articulate a finding that the prior art references include each element claimed...with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference.³

Claim 1 recites, for example, a global error counter and a global set point and a set of dialog state error counters and a corresponding set of dialog error set points. The Examiner appropriately acknowledges that Gorin does not teach dialog state error counters or dialog state error set points.⁴ The Examiner alleges that Dunn, column 5, line 47 to column 6, line 47 teaches dialog state error values and set points as claimed. Appellants disagree with the Examiner's interpretation of Dunn.

Claim 1 differentiates between a global error counter and set point, which is used to determine when to route a user to an agent, and dialog state error counters and set points, which are used to determine when to route a user to another dialog state module.

² *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___ at ___, 82 USPQ2d 1385 at 1395 (2007).

³ See, e.g., Manual of Patent Examination Procedure § 2143 (A).

⁴ Office Action, page 8.

The cited portion of Dunn describes two situations in which a recognition error is compared against a threshold number of recognition errors. In the first situation, Dunn describes disconnecting the user entirely if the number of timeouts exceeds a specified value.⁵ In the second situation, Dunn describes routing a caller to an agent if the number of invalid responses exceeds a threshold.⁶ Thus, the processes disclosed in Dunn and relied upon by the Examiner as teaching the dialog state error counter and values as claimed do not teach what is claimed. Whereas claim 1 expressly differentiates between global error counters, which are used to determine when to route a caller to an agent, and dialog state error counters, which are used to determine when to route a caller to a different dialog state module, the portion of Dunn cited by the Examiner as teaching dialog state error counters discusses when to route a caller to an agent or when to disconnect the caller entirely. Routing the caller to an agent is clearly not routing a caller to another dialog state module because claim 1 expressly differentiates between the two. Appellants would further submit that disconnecting a caller entirely cannot be reasonably considered to constitute routing the caller to another dialog state module as claimed.

Accordingly, Appellants respectfully submit that the rejection of claim 1 is improper because the references do not teach all of the claim elements.

Moreover, as discussed above with respect to claim 4, the Examiner's reliance on Dunn as support for teaching a global error counter as claimed is erroneous. Thus, the Section 103(a) rejection is further flawed because the support for the global error counter as claimed is deficient.

Claim 2

The rejection of claim 2 is improper because the references do not teach all of the claim elements. The Examiner correctly acknowledges that Gorin does not disclose the second dialog module being a speech directed dialog module and the third dialog module being a touch tone dialog module.⁷ The Examiner attempts to support the rejection by alleging that, because

⁵ Dunn, column 6, lines 17-24.

⁶ Dunn, column 6, lines 43-47.

⁷ Office Action, page 11.

Gorin's description of its natural language system encompasses "any form of communication," it would have been obvious to implement a second dialog module as a speech directed module and the third dialog module as a touch tone module.

Assuming solely for the sake of this discussion that Gorin's description of a natural language system encompasses all three types of dialog modules recited in claim 2, claim 2 expressly recites that each of the three dialog modules has its own error counter and set point. There is nothing in Gorin's description of a natural language system as accommodating multiple types of input that teaches the use of three distinctly different dialog modes and the use of distinct counters and set points for each of the three dialog modules. Thus, even if Gorin's natural language system encompasses systems analogous to the directed speech system and touch tone systems claimed, the references still do not teach all of the elements recited in claim 2.

Claim 6

Claim 6 recites dialog module error counters and set points distinctly from the global error counter and set point recited in the parent claim. Like he did with respect to claim 1, the Examiner again relied upon Dunn's disclosure of a timeout limit and an invalid response limit to support the rejection. Again, however, whereas claim 6 recites a distinction between the error counter used to determine when to route the user to an agent, i.e., a global error counter and set point, and dialog error counters and set points as claimed, Dunn does not teach a counter and set point that are used in the manner distinct from the manner in which the global error counter and set point is used.

Claim 7

The rejection of claim 7 is improper because the references do not teach all of the claim elements. The Examiner correctly acknowledges that Gorin does not disclose the second dialog being a speech directed dialog module and the third dialog module being a touch tone dialog

module.⁸ As discussed above with respect to claim 2, the Examiner alleges that Gorin's description of a broadly described natural language system support the rejection.

Claim 7 expressly recites the use of three dialog modules. There is nothing in Gorin's description of an natural language system as accommodating multiple types of input that teaches the use of three distinctly different dialog modes. Thus, even if Gorin's natural language system encompasses systems analogous to the directed speech system and touch tone systems claimed, the references still do not teach all of the elements recited in claim 7.

Claim 12

The rejection of claim 12 is improper because the references do not teach all of the claim elements. The Examiner correctly admits that neither of the two references relied upon to support the rejection teaches the claim element. Undeterred by the lack of teaching in the prior art, however, the Examiner simply states that, despite the absolute lacking of teaching in the cited references of the claimed element, the claimed element would have been an obvious modification of the two references.

Appellants respond that *KSR* itself expressly states that a Section 103(a) rejection is premised upon the presence of the claimed elements in the prior art. Here, where the Examiner admits that the claimed elements are not found in the prior art, the Section 103(a) rejection must be improper.

⁸ Office Action, page 11.


SUMMARY

Appellant requests the Board to review and reverse the rejections of the pending claims. Appellant believes there are no fees due at this time; however, the Commissioner is authorized to any other fees necessary, or credit any overpayment to the Deposit Account of Jackson Walker L.L.P., No. 10-0096.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1 (original). A system for managing recognition errors in a multiple dialog state environment comprising:

- an error management module having a global error counter, a global error set point, a first dialog state error counter, a first dialog state error set point, a second dialog state error counter, a second dialog state error set point, a third dialog state error counter, and a third dialog state error set point;

- a first dialog state module operable to interact with a user to perform at least one interaction task;

- a second dialog state module operable to interact with a user to perform at least one interaction task;

- a third dialog state module operable to interact with a user to perform at least one interaction task;

- each dialog state module further operable to:

- determine whether the interaction task has been successfully completed or whether a recognition error has occurred;

- update the global error counter and the respective dialog counter if an error is detected;

- direct the user to an agent if the global error counter equals the global error set point;

- direct the user to a different dialog state if the respective dialog state error counter equals the respective dialog state error set point;

- re-prompt the user to complete the interaction task if the respective dialog state error counter is less than the respective dialog state error set point; and

- selectively directing the user to a subsequent interaction task after successful completion of the interaction task.

2 (original). The system of claim 1 further comprising:

the first dialog state module operable to interact with the user via a natural language dialog;

the second dialog state module operable to interact with the user via a speech directed dialog; and

the third dialog state module operable to interact with the user via a touch tone dialog.

3 (original). The system of claim 2 further comprising:

the global error set point equal to at least one;

the first dialog state error set point equal to at least two;

the second dialog state error set point equal to at least one; and

the third dialog state error set point equal to at least one.

4 (previously presented). A system for managing recognition errors in a multiple dialog state environment comprising:

an error management module having a global error counter and a global error set point;

a user interaction module in communication with the error management module and operable to interact with users to perform at least one interaction task, the user interaction module operable to interact with the user via at least two dialog states;

the user interaction module operable to determine whether an interaction task has been successfully completed or if a recognition error has occurred;

the user interaction module further operable to communicate the occurrence of a recognition error to the error management module; and

the user interaction module operable to determine whether to direct a user to an agent based upon the global error counter and the global error set point.

5 (original). The system of claim 4 further comprising the global error set point equal to at least one and the user interaction module directs the user to an agent if the global error counter is equal to the global error set point.

6 (previously presented). The system of claim 4 further comprising:

the error management module having a first dialog state error counter, a second dialog state error counter, a third dialog state error counter, a first dialog state error set point, a second dialog state error set point and a third dialog state error set point;

the user interaction module operable to communicate the occurrence of a recognition error during use of a particular dialog state to the error management module.

7 (previously presented). The system of claim 6 where the user interaction module further comprises:

a first dialog state module operable to interact with a user according to a natural language dialog state;

a second dialog state module operable to interact with a user according to a speech directed dialog; and

a third dialog state module operable to interact with a user via a touch tone dialog state.

8 (original). The system of claim 7 further comprising:

the user interaction module operable to direct a user to the second dialog module to complete the interaction task after detecting a recognition error from the first dialog state module and determining that the first dialog state counter is equal to the first dialog state error set point.

9 (original). The system of claim 7 further comprising the user interaction module operable to direct a user to the third dialog module to complete the interaction task after detecting a recognition error resulting from the second dialog state module and determining that the second dialog state counter is equal to the second dialog state error set point.

10 (original). The system of claim 7 further comprising the user interaction module operable to direct a user to an agent to complete the interaction task after detecting a recognition error resulting from the third dialog state module and determining that the third dialog state counter is equal to the third dialog state error set point.

11 (original). The system of claim 7 further comprising the user interaction module operable to re-prompt the user to complete the interaction task using the last-used dialog state module after detecting a recognition error resulting from using the last-used dialog state module and determining that the respective dialog state counter is less than the respective dialog state error set point.

12 (original). The system of claim 6 further comprising the global error set point operable to be selectively changed based upon agent availability.

13 (original). The system of claim 7 further comprising the user interaction module operable to direct the user to a subsequent interaction task using the last-used dialog state after determining that the interaction task has been successfully completed.

14 (previously presented). An error management module for use with a communication system operable to support a multiple dialog state environment comprising:

- a global error counter operable to record the total number of recognition errors experienced by the communication system during an interaction with a particular user;

- a global error set point;

- a first dialog state error counter operable to record the number of errors experienced by the communication system while using a first dialog state during an interaction with the particular user;

- a first dialog state error set point;

a second dialog state error counter operable to record the number of errors experienced by the communication system while using a second dialog state during an interaction with the particular user;

a second dialog state error set point; and

the error management module operable to provide the global error counter, the global error set point, the first dialog state error counter, and the first state error set point to the communication system for managing dialog state recognition errors.

15 (original). The error management module of claim 14 further comprising:

a third dialog state error counter operable to record the number of errors experienced by the communication system using a third dialog state during an interaction with the particular user; and

a third dialog state error set point.

16 (original). The error management module of claim 14 further comprising the global error counter, first dialog state error counter and second dialog state error counter operable to be selectively reset after completing an interaction with a user.

17 (original). The error management module of claim 14 further comprising the first dialog error counter and the second dialog error counter operable to be selectively reset after completing an interaction task and initiating a subsequent interaction task with the user.

18 (original). A method for managing recognition errors in a multiple dialog state environment comprising:

setting a global error set point to a predefined value;

monitoring recognition errors within a multiple dialog state environment;

incrementally increasing a global error counter after a recognition error is detected; and

directing a user to an agent if the global error counter is equal to the global error set point.

19 (original). The method of claim 18 further comprising resetting the global error counter for each user.

20 (original). The method of claim 18 further comprising:
providing at least one error set point associated with a selected dialog state;
providing an error counter associated with the selected dialog state;
monitoring recognition errors occurring within the selected dialog state;
incrementally increasing the error counter associated with the selected dialog state after a recognition error within the selected dialog state is detected; and
directing a user to a different dialog state if the selected dialog error counter is equal to the selected error set point.

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IX. EVIDENCE APPENDIX

NONE

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X. RELATED PROCEEDINGS APPENDIX

NONE